

REMARKS

Reexamination and reconsideration of claims 1, 5-11, 13, 14, and 16-42 are respectfully requested. Claims 3, 4, 12, and 15 were cancelled without prejudice in the previous reply. Additionally, claims 2 and 42 are cancelled without prejudice in this reply. The Examiner's approval of the corrected drawings is acknowledged with appreciation.

Claims 1-42 were rejected under 35 U.S.C. sec. 103(a) applying Mims, III in view of U.S. Pat. Nos. 5,796,905 ('905), 6,381,390 ('390), and 5,379,363 ('363). For publications to be applicable under sec. 103(a), the combination of teachings must, *inter alia*, expressly or inherently, teach, disclose, or suggest each and every feature of the claimed invention. Additionally, motivation and suggestion to combine the publications must be present.

The Mims, III publication teaches a resistor color code for ascertaining an electrical property, namely, the electrical resistance value (ohms) of the resistor. On the other hand, the '905 patent relates to color marking on a single optical fiber. Specifically, the '905 patent teaches the identification of optical fibers beyond the standard twelve colors. This is accomplished by marking the optical fiber with a color marking such as a stripe, or band, underneath a further colored layer. See Figs. 1-3 of the '905 patent. Compare with the '363 patent which teaches marking an optical fiber ribbon. Specifically, the '363 patent teaches spaced apart sets of annular marks of the same color disposed transversely about the optical fiber ribbon. See Figs. 3-4 and Col. 4, ll. 18-22 of the '363 patent. For example, the ninety-ninth optical ribbon requires ninety-nine annular bands in spaced apart sets. Moreover, the craftsman must count each band in a set to determine the number given to the ribbon. The '390 patent teaches a color-coding identification scheme for optical fiber ribbons using two colors on a surface of

09/886,559

A1085

Page 4

the ribbon.

The amendment of claims 1 and 29 is not an admission that the art of record teaches, discloses, or otherwise suggests the features of the claims. Claim 1 recites, *inter alia*, an optical ribbon having at least a first colored region, a second colored region, and another colored region, wherein the first and second colored regions respectively denote first and second characters of at least a two-character identifier for the optical ribbon serving to indicate an optical ribbon number and the another colored region denotes the type of optical fibers contained in the optical ribbon. Claim 14 recites, *inter alia*, at least one of the colored regions has a color selected to denote an identifying number pre-assigned to the optical ribbon and another of the colored regions has a color selected to indicate a type of the optical fibers contained in the optical ribbons. Claim 22, recites, *inter alia*, at least one of the colored regions having a color selected to denote at least one character of the identifier for the optical ribbon and another of the colored regions having a color selected to denote the type of optical fibers. Claim 29 recites, *inter alia*, applying a series of colored regions to one side of the covering for conveying identifying information about a predetermined location of the optical ribbon in an optical ribbon stack and the type of optical fibers in the ribbon.

It is respectfully submitted that the applied art, taken alone or in combination with the other art of record, does not implicitly or expressly teach, disclose, or suggest all of the features of claims 1, 5-11, 13, 14, and 16-33. Specifically, the combination of references fails to teach, disclose, or otherwise suggest using a colored region to denote the type of optical fibers in the ribbon. Furthermore, the Office Action merely states that "assigning desired information to the color-coding is an obvious designer's choice," without a teaching reference, or other evidence of record, teaching the each and every feature of

claims 1, 14, 22, and 29. See p. 2 of the Office Action dated November 2, 2002.

First, merely stating that features of the claimed invention are an obvious choice in design, without more, is an improper rejection and does not make out a *prima facie* case of obviousness supported by concrete evidence as required. Second, stating that features of a claimed invention are an obvious choice in design, without more, does not afford the Applicant a fair opportunity to address the rejection. Moreover, if the feature(s) of the claims are merely a matter of design choice, then citing a reference teaching the same should require minimal effort. On the other hand, if the Office Action relies on personal knowledge, Applicants respectfully request, pursuant to 37 C.F.R. § 1.104(d)(2), that the Examiner submit an affidavit indicating that the Examiner is relying on personal knowledge and the basis for that reliance. Because the combination of references does not teach each and every feature of claims 1, 14, 22, and 29, the Office Action failed to make a *prima facie* case of obviousness with respect to these claims. For at least this reason, withdrawal of the sec. 103(a) rejection of claims 1, 5-11, 13, 14, and 16-33 is warranted and is respectfully requested.

Regarding claim 34, claim 34 recites an optical ribbon including a plurality of optical fibers arranged generally parallel to one another in a generally planar array, the optical fibers being arranged into at least two fiber sub-units each having at least one optical fiber, and an outer matrix covering that encapsulates and binds together the fiber sub-units, the outer matrix covering comprising separate regions of a first matrix material, the first matrix material adhered respectively to each of the fiber sub-units and a connecting region of a second matrix material joining adjacent fiber sub-units together, the first matrix material adhering to the fiber sub-units with a greater tenacity than does the second matrix material such that

09/886,559  
A1085  
Page 6

the outer matrix covering preferentially splits at the connecting region between fiber sub-units whereby the separate regions of the first matrix material tend to remain adhered to the fiber sub-units upon separation thereof.

It is respectfully submitted that the applied art, taken alone or in combination with the other art of record, does not implicitly or expressly teach, disclose, or otherwise suggest all of the features of claim 34. An example of the optical ribbon of claim 34 is depicted in Fig. 2D of the present application. Claim 34 recites, *inter alia*, the outer matrix covering comprising separate regions of a first matrix material, the first matrix material adhered respectively to each of the fiber sub-units and a connecting region of a second matrix material joining adjacent fiber sub-units together, the first matrix material adhering to the fiber sub-units with a greater tenacity than does the second matrix material such that the outer matrix covering preferentially splits at the connecting region between fiber sub-units whereby the separate regions of the first matrix material tend to remain adhered to the fiber sub-units upon separation thereof. The '390 patent is the only publication of the rejection that teaches ribbon subunits (Fig. 5), however, the publication does not disclose the features such as the outer matrix covering including first and second regions as recited in claim 34. For at least these reasons, withdrawal of the sec. 103(a) rejection of claims 34-36 is warranted and is respectfully requested.

Regarding claim 37, the claim recites an optical ribbon including a plurality of optical fibers arranged generally parallel to one another in a generally planar array, the optical fibers including at least one adjacent pair of optical fibers bound together by a connecting matrix material, the connecting matrix material being of a predetermined color for identifying the pair of optical fibers and covering less than all of the adjacent pair of optical fibers, and an outer matrix covering <sup>ND</sup> Support.

09/886,559  
A1085  
Page 7

that encapsulates and binds together the optical fibers, the outer matrix covering being sufficiently transparent that the color of the connecting matrix material is visible through the outer matrix covering.

It is respectfully submitted that the applied art, taken alone or in combination with the other art of record, does not implicitly or expressly teach, disclose, or otherwise suggest all of the features of claim 37. An example of the optical ribbon of claim 37 is depicted in Fig. 6 of the present application. Fig. 4 of the '390 patent requires a dual-layered matrix, in this embodiment the first or second layer of matrix materials 12, 13 can be colored. However, if the first layer is colored it is done in a manner described in one of the previous three embodiments (Fig. 1-3). See the '390 patent at Cols. 4-5, ll. 53-6. Specifically, the colored portion is either mixed into the matrix material and completely surrounds the optical fibers, or the colored portion is directly applied on a surface the ribbon and does not connect a pair of optical fibers. See the '390 patent at Cols. 3-4, ll. 59-1.

On the other hand, claim 37 recites at least one adjacent pair of optical fibers bound together by a connecting matrix material, the connecting matrix material being of a predetermined color for identifying said pair of optical fibers and covering less than all of the adjacent pair of optical fibers, and an outer matrix covering that encapsulates and binds together the optical fibers, the outer matrix covering being sufficiently transparent that the color of the connecting matrix material is visible through the outer matrix covering. See, for example, Fig. 6 of the present application. Clearly, the '390 patent does not disclose, teach, or otherwise suggest each and every feature of claim 37, therefore, the Office Action failed to make a *prima facie* case with respect to claim 37. For at least these reasons, withdrawal of the sec. 103(a) rejection of claims 37 and 38 is

09/886,559  
A1085  
Page 8

warranted and is respectfully requested.

The amendment of claim 39 is not an admission that the art of record teaches, discloses, or otherwise suggests the features of the claims. Claim 39 recites an optical ribbon including a plurality of optical fibers arranged generally parallel to one another in a generally planar array, and a matrix covering that encapsulates and binds together the optical fibers, the matrix covering comprising a plurality of different colored regions formed of a first matrix material and bound respectively to the plurality of optical fibers for identifying the optical fibers, the matrix covering further comprising a second matrix material that intercedes between and maintains the colored regions substantially separate from one another, the first matrix material adhering to the optical fibers with a greater tenacity than the second matrix material, whereby the colored regions tend to remain adhered to the optical fibers and each colored region is bound to less than all of the outer surface of the respective optical fiber.

It is respectfully submitted that the applied art, taken alone or in combination with the other art of record, does not implicitly or expressly teach, disclose, or otherwise suggest all of the features of claim 39. An example of the optical ribbon of claim 39 is depicted in Fig. 7 of the present application. Neither Fig. 4 or Fig. 5 of the '390 patent, or any other art of record, teaches, discloses, or otherwise suggests, *inter alia*, a second matrix material that intercedes between and maintains the colored regions substantially separate from one another, the first matrix material adhering to the optical fibers with a greater tenacity than the second matrix material, whereby the colored regions tend to remain adhered to the optical fibers and each colored region is bound to less than all of the outer surface of the respective optical fiber. For at least these reasons, withdrawal of the sec. 103(a) rejection of claims 39-41

is warranted and is respectfully requested.

No new fees are believed due in connection with this Reply. If any fees are due in connection with this Reply, please charge any fees, or credit any overpayment, to Deposit Account Number 19-2167.

Allowance of all pending claims is believed to be warranted and is respectfully requested.

The Examiner is welcomed to telephone the undersigned to discuss the merits of this patent application.

Respectfully submitted,

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09/886,559  
A1085  
Page 10

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

1. (twice amended) A fiber optic cable, comprising:  
a tube defining an interior passage therein;  
an optical ribbon disposed in the interior passage of the tube, the optical ribbon comprising a plurality of generally parallel optical fibers arranged in a generally planar array and bound together by a covering of a matrix material surrounding said generally planar array, the optical ribbon having at least a first colored region, [and] a second colored region, and another colored region, wherein the first and second colored regions respectively denote first and second characters of at least a two-character identifier for the optical ribbon serving to indicate an optical ribbon number and the another colored region denotes the type of optical fibers contained in the optical ribbon.

Please cancel claim 2 without prejudice.

13. (twice amended) The fiber optic cable of claim 1, [further comprising a third colored region,] the another [third] colored region serving to indicate whether the optical fibers of the optical ribbon are single-mode or multi-mode optical fibers.

29. (twice amended) A method for making an optical ribbon, comprising:

arranging a plurality of optical fibers generally parallel to one another in a generally planar array;

extruding a covering of matrix material over the generally planar array of optical fibers to cover and bind the fibers together; and

applying a series of colored regions to one side of the covering, the colored regions being in a predetermined

09/886,559

A1085

Page 11

arrangement visible at an outer surface of the covering, for conveying identifying information about a predetermined location of the optical ribbon in an optical ribbon stack and the type of optical fibers in the ribbon.

39. (amended) An optical ribbon, comprising:

a plurality of optical fibers arranged generally parallel to one another in a generally planar array; and

a matrix covering that encapsulates and binds together the optical fibers, the matrix covering comprising a plurality of different colored regions formed of a first matrix material and bound respectively to the plurality of optical fibers for identifying the optical fibers, the matrix covering further comprising a second matrix material that intercedes between and maintains the colored regions substantially separate from one another, the first matrix material adhering to the optical fibers with a greater tenacity than the second matrix material, whereby the colored regions tend to remain adhered to the optical fibers and each colored region is bound to less than all of the outer surface of the respective optical fiber.

Please cancel claim 42 without prejudice.